

WHAT IS CLAIMED IS:

1. An instrumented rolling bearing device comprising:

a non-rotating race provided with a raceway;

a rotating race provided with a raceway;

at least one row of rolling elements arranged between said raceways of the rotating and non-rotating races;

an assembly for detecting rotation parameters comprising a non-rotating sensor assembly and a rotating encoder; and

an elastic member intended for axially prestressing the rolling bearing, retained axially on the sensor assembly, the elastic member being of annular shape and having an outer diameter smaller than or equal to that of the outer race of the bearing, the elastic member comprising a supporting surface designed to be in contact with an element outside said bearing device in order to exert, directly or indirectly, by reaction from the above element outside said device, an axial force on the non-rotating race in a direction opposite to the detection assembly.

2. The device as claimed in claim 1, in which the elastic member is a corrugated washer.

3. The device as claimed in claim 1, in which the elastic member is a conical washer.

4. The device as claimed in claim 1, in which the elastic member is a washer provided with elastic tongues.

5. The device as claimed in claim 1, in which the sensor assembly comprises a body fitted with means for retaining the elastic member.
6. The device as claimed in claim 5, in which said retaining means comprise at least one
5 finger.
7. The device as claimed in claim 2, in which the sensor assembly comprises a body fitted with means for retaining the elastic member.
8. The device as claimed in claim 7, in which said retaining means comprise at least one
10 finger.
9. The device as claimed in claim 1, in which the sensor assembly comprises a printed circuit and at least one sensor element supported by the printed circuit, the elastic member being
15 in contact with the printed circuit on an opposite side to the sensor element.
10. The device as claimed in claim 2, in which the sensor assembly comprises a printed circuit and at least one sensor element supported by the printed circuit, the elastic member being in contact with the printed circuit on an opposite side to the sensor element.
20
11. The device as claimed in claim 9, in which the elastic member is arranged axially between the printed circuit and means for retaining said elastic member, forming part of the sensor assembly.
12. The device as claimed in claim 1, in which the rolling elements transmit said axial
25 prestress.
13. The device as claimed in claim 9, in which the rolling elements transmit said axial prestress.

14. The device as claimed in claim 11, in which the rolling elements transmit said axial prestress.

5 15. The device as claimed in claim 1, in which the elastic member for axially prestressing the rolling bearing pushes the non-rotating race away from said assembly for detecting rotation parameters.

10 16. An detection assembly for detecting rotation parameters comprising:
a non-rotating sensor assembly;

a rotating encoder; and

15 an axially prestressing elastic member retained axially on the sensor assembly, the elastic member being of annular shape, wherein the elastic member has a diameter smaller than or equal to that of the sensor assembly; and wherein the elastic member comprises a supporting surface designed to be in contact with an element outside the device in order to exert, directly or indirectly, by reaction, an axial force on the detection assembly.

20 17. The assembly as claimed in claim 16, in which the elastic member comprises a washer.

18. An electric motor comprising:

25 a rotor;

a stator; and

an instrumented rolling bearing device comprising:

a non-rotating race;

a rotating race;

at least one row of rolling elements arranged between two raceways of the rotating and non-rotating races; and

an assembly for detecting rotation parameters comprising:

a non-rotating sensor assembly; and

a rotating encoder;

wherein the motor further comprises an elastic member configured to axially prestress the rolling bearing and retained axially on the sensor assembly, the elastic member being of annular shape and having a diameter smaller than or equal to that of the outer race of the bearing, said elastic member comprising a supporting surface designed to be in contact with an element outside the bearing device in order to exert, directly or indirectly, by reaction, an axial force on the non-rotating race in a direction opposite to the detection assembly.

19. The motor as claimed in claim 18, in which the elastic member is arranged between the sensor assembly and a non-rotating part of the motor.